

**Product Announcement**



## Ventura FIO EtherCAT Coupler and I/O Module in compact design

**EtherCAT** 

- **Compact**
- **Secure contact**
- **Interference-immune**
- **EtherCAT down to the I/O module**
- **1000 I/Os in 30  $\mu$ s**

- Clock speed increase via EtherCAT (100 Mbit/s)
- Real-time Ethernet right down to the I/O modules
- Standard modules
- Customer-specific modules



## System description

### EtherCAT – Ethernet Control Automation Technology

EtherCAT is currently the most powerful Ethernet-based field bus system. EtherCAT sets new speed standards and thanks to its flexible topology and simple configuration is absolutely ideal for controlling extremely fast processes. For example, 1000 I/Os are achieved in 30  $\mu$ s. Because of its high performance, simple wiring and openness to other protocols, EtherCAT is used as a fast drive and I/O bus on the industrial PC, or also in combination with small control systems. Where conventional field bus systems reach their limits, EtherCAT sets new standards.

EtherCAT connects the control system as fast as a backplane bus, both with the I/O modules and with drives. EtherCAT control systems thus behave almost like central control systems, and bus runtimes as they occur in conventional field bus systems do not need to be accounted for.

### Ventura FIO – Ventura Fast Input Output

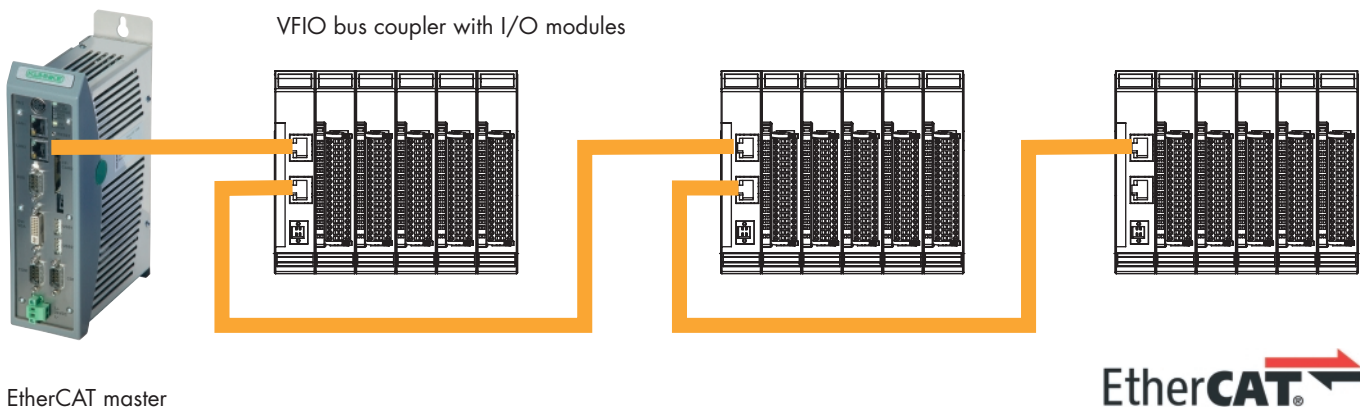
The Ventura automation platform was developed specifically for machine-related operation. As EtherCAT masters, Ventura industrial PCs are equipped with hard realtime behavior and a CoDeSys-PLC. **Ventura FIO** is a system of I/O modules to link the process signals within an EtherCAT network.

**Ventura FIO** consists of the VFIO bus coupler and various VFIO-I/O modules. The VFIO bus coupler converts the transmission physics from Twisted Pair to LVDS (E-Bus) and generates the system supply for the LVDS modules. 100 Base TX lines usual in the office world are connected on the one side and the VFIO modules for the process signals in sequence on the other side, whereby the EtherCAT protocol is retained right down to the last I/O module. The connection of the inbound and return lines is automatically closed at the end of the modular device, so that the next EtherCAT device can be connected to the second port of the bus coupler again with a 100 Base TX line.

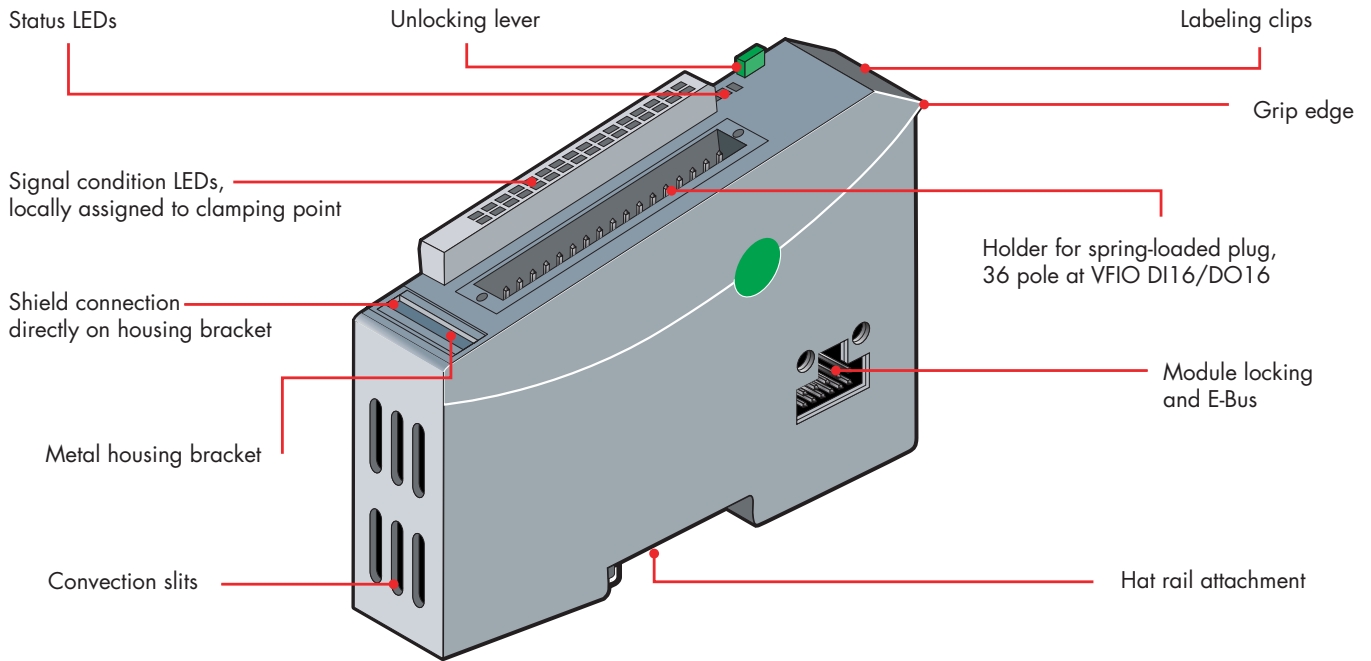
## System properties

Field bus	EtherCAT 100 Mbit/s
Dimensions	25 mm x 120 mm x 90 mm (W x H x D)
Housing	Aluminum
Shield connection	Directly at module
Mounting	35 mm DIN rail (top-hat rail)
I/O connection	Spring-loaded plug with mechanical ejection
Signal display	LED, assigned to the clamping point locally
Diagnosis	LED: Bus status, module status, broken wire/over-current
Number of connections	Up to 32 digital I/Os per module, up to 8 analog channels per module
Power supply	24 V DC -20 % / +25 %
Number of I/O modules	20 per bus coupler (together max. 3 A power intake)
Galvanic separation	Modules are galvanically separated from one another and versus the bus
Operating and ambient conditions	Storage temperature: -25 °C...+70 °C, Operating temperature: 0 °C...+55 °C Relative humidity: 5 %...95 % without dewing
Protection	IP20
Interference immunity	Zone B per EN 61131-2

## EtherCAT Network



## Module structure



## Technical Data

### VFIO bus coupler

Part no.	694.400.00
Field bus	EtherCAT 100 Mbit/s 100 Base TX per IEEE802.3
Connection	2 x RJ45
Controller	ASIC ET1100
Connection VFIO I/O module	Integrated in module side panel

### VFIO I/O Module

Field bus	EtherCAT 100 Mbit/s LVDS: E-Bus
Controller	ASIC ET1200
Connection of additional VFIO I/O module	Integrated in module side panel

### VFIO DI16/DO16

Part no.	694.450.01
Digital inputs	16: Delay: 0.1 ms
Digital outputs	16: Load: 0.5 A, highside semiconductor
Diagnosis	LED: Module status, status of individual I/Os

### VFIO AI4-I

Part no.	694.441.01
Analog inputs	4: Resolution 12 Bit, measuring range 0(4)...20 mA, 10 kHz

### VFIO AI4/8-U

Part no.	694.441.02
Analog inputs	4 differential signal or 8 single ended: Resolution 12 Bit, measuring range 0...10 V, ± 10 V, ± 5 V, ± 2.5 V, 10 kHz

### VFIO AO4

Part no.	694.442.02
Analog outputs	4: Resolution 12 Bit, output signal 0...10 V, ± 10 V, (at load < 10 mA), 0(4)...20 mA (at load < 560 Ω) (configurable), 1 kHz

*Other modules in preparation: Temperature recording, counter, communication modules, functional modules*





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